

REMARKS

Prior to entry of this amendment, claims 1-22 are currently pending in the subject application. By this amendment, claims 1, 5 and 9 are amended. Claim 1 is amended solely to more particularly recite the features original claim 1 and claims 5 and 9 are amended solely to include features of original claim 1, from which claims 5 and 9 previously depended. No new matter is added. Claims 1, 5 and 9 are independent. Reconsideration of the application is respectfully requested.

Applicants appreciate the Examiner's acknowledgement of applicants' claim for foreign priority and receipt of a certified copy of the priority document filed in parent application 10/215,342.

Applicants further appreciate the Examiner's acceptance of the drawings filed on March 4, 2004.

A. Introduction

In the outstanding Office action, the Examiner rejected claims 1, 4, 12 and 13* under 35 U.S.C. § 102(e) as being anticipated by U.S. Patent No. 6,146,970 to Witek et al. (hereinafter "the Witek et al. reference"); rejected claims 2, 3, 17 and 20-22 under 35 U.S.C. § 103(a) as being unpatentable over the Witek et al. reference as applied to claim 1 above and further in view of allegedly admitted prior art; rejected claims 14-16, 18 and 19 under 35 U.S.C. § 103(a) as being unpatentable over the Witek et al. reference as applied to claim 1 above and further in view U.S. Patent No. 6,326,282 to Park et al. (hereinafter "the

* The December 28, 2005 Office action states that Claim 1 is rejected under 35 U.S.C. § 102(e) by the Witek et al. reference, however, the body of the rejection refers to claims 4, 12 and 13. During a January 9, 2005 telephone conference, Examiner Deo informed applicants' representative that Claims 1, 4, 12 and 13 are rejected under 35 U.S.C. § 102(e) by the Witek et al. reference.

Park et al. reference”); and objected to claims 5-11 as being dependent upon a rejected base claim, but identified claims 5-11 as containing allowable subject matter and being allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claim.

B. The Park et al. Reference is Not Listed on December 28, 2005 PTO-892

Applicants respectfully request that the Park et al. reference be listed on a PTO-892 to help ensure that the Park et al. reference will be listed on the cover page of any patent issuing from the above-identified application.

C. Asserted Anticipation Rejection of Claims 1, 4, 12 and 13

In the outstanding Office action, the Examiner rejected claims 1, 4, 12 and 13 under 35 U.S.C. § 102(e) as being anticipated by the Witek et al. reference. Claim 1 now recites:

A method of isolating a trench, comprising forming a first trench and a second trench in a first region and a second region of a semiconductor substrate, respectively, each of the first trench and the second trench including an upper region and a lower region, forming a lower isolation pattern to fill the lower region of the first trench, and forming an upper isolation pattern to fill the upper region of the first trench, the upper region of the second trench and the lower region of the second trench, where the upper region of the first trench substantially corresponds to the upper region of the second trench and the lower region of the first trench substantially corresponds to the lower region of the second trench, and a material filling the lower region of the first trench being different from a material filling the lower region of the second trench.

The Witek et al. reference may disclose trenches 210 that are both initially filled with trench fill material 216a, then polished and etched to a recessed oxide trench fill regions 216c in both trenches 210, as shown in FIG. 10 of the Witek et al. reference. Then, a silicon nitride layer 218a is deposited to fill remaining portions of each of the

trenches 210, as shown in FIGS. 11 and 12 of the Witek et al. reference (col. 7, line 12 to col. 8, line 39). Thus, the Witek et al. reference fails to disclose or suggest a method of isolating a first trench and a second trench in which a material filling the lower region of the first trench is different from a material filling the lower region of the second trench.

For at least these reasons, applicants submit that the Witek et al. reference fails to disclose or suggest all the features of independent claim 1 as well as all the features of claims 4, 12 and 13, which directly or indirectly depend from claim 1. It is respectfully requested that the rejection be withdrawn.

D. Asserted Obviousness Rejection of Claim 2, 3, 17 and 20-22

In the outstanding Office action, the Examiner rejected claims 2, 3, 17 and 20-22 under 35 U.S.C. § 103(a) as being unpatentable over the Witek et al. reference as applied to claim 1 above and further in view of allegedly admitted prior art.

As discussed above, the Witek et al. reference fails to disclose or suggest all the features of independent claim 1 from which claims 2, 3, 17 and 20-22 directly or indirectly depend. Applicants further submit that the allegedly admitted prior art fails to overcome the deficiencies of the Witek et al. reference, as applied to claim 1.

For at least these reasons, applicants respectfully submit that the combination of the Witek et al. reference and the allegedly admitted prior art fails to render obvious the subject matter of claims 2, 13, 17 and 20-22. It is respectfully requested that the rejection be withdrawn.

E. Asserted Obviousness Rejection of Claims 14-16, 18 and 19

In the outstanding Office action, the Examiner rejected claims 14-16, 18 and 19 under 35 U.S.C. § 103(a) as being unpatentable over the Witek et al. reference as applied to claim 1 above and further in view the Park et al. reference.

As discussed above, the Witek et al. reference fails to disclose or suggest all the features of independent claim 1 from which claims 14-16, 18 and 19 directly or indirectly depend. Applicants further submit that the Park et al. reference fails to overcome the deficiencies of the Witek et al. reference, as applied to claim 1.

For at least these reasons, applicants respectfully submit that the combination of the Witek et al. reference and the Park et al. reference fails to render obvious the subject matter of claims 14-16, 18 and 19. It is respectfully requested that the rejection be withdrawn.

F. Allowable Subject Matter

Applicants appreciate the Examiner's indication of allowable subject matter in claims 5-11. Applicants amended claims 5 and 9 to incorporate the features of original claim 1, from which they previously depended, and to place the claims in independent form. Thus, independent claims 5 and 9 as well as claims 6-8, 10 and 11, which directly or indirectly depend from either claim 5 or claim 9 are allowable. Further, for at least the reasons discussed above, applicants submit that all pending claims are allowable.

G. Conclusion

The remaining documents cited by the Examiner were not relied on to reject the claims. Therefore, no comments concerning these documents are considered necessary at this time.

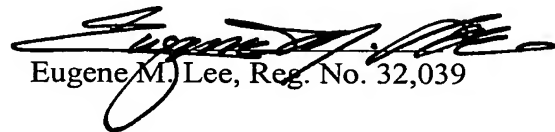
If the Examiner believes that additional discussions or information might advance the prosecution of the instant application, the Examiner is invited to contact the undersigned at the telephone number listed below to expedite resolution of any outstanding issues.

In view of the foregoing amendments and remarks, reconsideration of this application is earnestly solicited, and an early and favorable further action upon all the claims is hereby requested.

Respectfully submitted,

LEE & MORSE, P.C.

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Eugene M. Lee, Reg. No. 32,039

LEE & MORSE, P.C.
1101 WILSON BOULEVARD, SUITE 2000
ARLINGTON, VA 22209
703.525.0978 TEL
703.525.4265 FAX

PETITION and
DEPOSIT ACCOUNT CHARGE AUTHORIZATION

This document and any concurrently filed papers are believed to be timely. Should any extension of the term be required, applicant hereby petitions the Director for such extension and requests that any applicable petition fee be charged to Deposit Account No. 50-1645.

If fee payment is enclosed, this amount is believed to be correct. However, the Director is hereby authorized to charge any deficiency or credit any overpayment to Deposit Account No. 50-1645.

Any additional fee(s) necessary to effect the proper and timely filing of the accompanying papers may also be charged to Deposit Account No. 50-1645.